

III. Remarks

Claims 1-7 are pending in the application. Claim 1 is independent. Claims 1-7 have been amended. No new matter has been added.

The title has been amended to read “Liquid Crystal Display Device with Wedge-Shaped Light-Guiding Plate”, thus including descriptive language that is recited in independent claim 1. Applicants submit that the amended title is clearly indicative of the invention to which the claims are directed. No new matter has been added.

In response to the objection relating to claim 1 noted at page 2 of the Office Action, claim 1 has been amended to clarify that the recited housing houses the recited light-guiding plate and the linear light source. Support for this amendment may be found at least at paragraph [0034]. Accordingly, no new matter has been added.

Claim 6 stands rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite, for the reasons provided at page 2 of the Office Action. Accordingly, claim 6 has been amended to clarify that the recited circuit board is fixed in a position higher than a bottom portion of the housing. Support for this amendment may be found at least at paragraph [0064]. Accordingly, no new matter has been added.

Claims 1-7 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,910,784 B2 to Ito (hereinafter referred to as “Ito”), for the reasons provided at pages 3 and 4 of the Office Action. Claims 1-7 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Application Publication No. US 2002/0149713 A1 to Ishida et al. (hereinafter referred to as “Ishida”), for the reasons provided at pages 4-6 of the Office Action. All prior art rejections are hereby traversed.

Independent claim 1 recites a liquid crystal display device having a liquid crystal panel and an illumination unit for illuminating the liquid crystal display panel. The illumination unit includes a substantially wedge-shaped light-guiding plate having a backside being inclined so as to be formed thinner from one side edge to the other side edge, a linear light source disposed along a thicker plate surface at one side edge of the light-guiding plate, lead wires severally connected to both ends of the linear light source, and a housing that houses the light-guiding plate and the linear light source. A groove is formed on the bottom wall of the housing such that a gap is created between the backside of the light-guiding plate and the bottom wall at a certain area portion of the light-guiding plate wherein the plate is the least thick, with a part of the lead wires residing in the gap and being arranged along the other side edge of the light-guiding plate, and made to extend to the outside from the backside of the housing.

At page 3 of the Office Action, it is stated with reference to Figures 1 and 2 of Ito that “Ito discloses a LCD device . . . having . . . an illumination unit . . . [that] includes a substantially wedge-shaped light-guiding plate (1) having a backside being inclined so as to be formed thinner from one side edge to the other side edge”. However, an inspection of Figures 1 and 2 of Ito reveals that the light-guiding plate 1 of Ito is substantially rectangularly shaped, not substantially wedge-shaped. Furthermore, at column 4, lines 40-44 of Ito, it is stated that “The light guide plate 1 is a transparent light guide . . . molded as a plate-like object in the shape of an approximate rectangle”. Accordingly, the light guide plate 1 disclosed by Ito is a “plate-like object”, i.e., substantially flat and of uniform thickness, and it is “in the shape of an approximate rectangle”, in agreement with its plain visual appearance in

each of Figures 1 and 2. By contrast, there is no disclosure in Ito to suggest that the disclosed light guide plate 1 is “substantially wedge-shaped”, as recited in independent claim 1 of the present application. Further, there is no disclosure in Ito to suggest that the disclosed light guide plate 1 has “a backside being inclined so as to be formed thinner from one side edge to the other side edge”, as recited in independent claim 1 of the present application.

In addition, it is stated at page 3 of the Office Action that “Ito discloses . . . [that] a groove (14) is formed on the bottom wall of the housing (7) such that a gap is created between the backside of the light-guiding plate (1) and the bottom wall at a certain area portion of the light-guiding plate wherein the plate is least thick”. However, as described at column 6, lines 2-7 of Ito:

The reflecting sheet exposing section 14 is an opening section such as a cut-way portion formed in a side face in the wire 4 side of the rear face case 7 in order to expose the bend portion of the reflecting sheet in the shape of an erected letter L to the external environment.

Accordingly, as described in Ito, the reflecting sheet exposing section 14 is an opening section such as a cut-away portion, not a groove. Further, in view of the fact that the light guide plate 1 of Ito is a “plate-like object” that does not include a portion wherein the plate is least thick, there is no disclosure in Ito of a groove corresponding to this recited feature.

Therefore, Ito fails to disclose a substantially wedge-shaped light guiding plate having a backside being inclined so as to be formed thinner from one side edge to the other side edge, as recited in independent claim 1 of the present application. In addition, Ito fails to disclose a groove that is formed on the bottom wall of the housing such that a gap is created between the backside of the light-guiding plate and the bottom wall at a certain area portion of the light-guiding plate wherein the plate is the least thick, as recited in independent claim 1

of the present application. Accordingly, Applicants submit that independent claim 1 is allowable over Ito for at least the reasons described above. In addition, each of claims 2-7 depends from independent claim 1, and each is therefore also allowable over Ito for at least the same reasons.

At page 5 of the Office Action, with reference to Figures 4 and 5 of Ishida, it is stated that “Ishida discloses a LCD device . . . having . . . an illumination unit . . . [that] includes a substantially wedge-shaped light guiding plate (20) having a backside being inclined so as to be formed thinner from one side edge to the other side edge”. However, at paragraph [0042] of Ishida, in a description of Figure 5, Ishida states that:

In the liquid crystal display device of this embodiment, a chassis with reflector 20, which has an integrated shape of both chassis 3 and side reflector 4 used in the previous first embodiment, is provided instead of the chassis 3 and the side reflector 4.

Accordingly, Ishida fails to disclose a light-guiding plate at all; instead, Ishida discloses a direct-type backlight unit that does not use a light-guiding plate. Indeed, at paragraph [0002], Ishida discloses that “The present invention relates to a liquid crystal display device provided with a direct backlight”. In addition, in paragraph [0004], Ishida favorably contrasts the use of a direct backlight with the use of an edge backlight that uses a light guide plate with the use of a direct backlight.

Furthermore, an inspection of Figure 5 reveals that item 20 is not wedge-shaped, and that item 20 does not include a backside being inclined so as to be formed thinner from one side edge to the other side edge. Instead, item 20 appears to have an irregular shape that nonetheless appears to have a uniform thickness from one side edge to the other side edge.

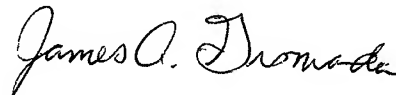
Therefore, Ishida fails to disclose a substantially wedge-shaped light guiding plate

having a backside being inclined so as to be formed thinner from one side edge to the other side edge, as recited in independent claim 1 of the present application. Accordingly, Applicants submit that independent claim 1 is allowable over Ishida for at least the reasons described above. In addition, each of claims 2-7 depends from independent claim 1, and each is therefore also allowable over Ishida for at least the same reasons.

In view of the above amendments and remarks, it is believed that this application is now in condition for allowance, and a Notice thereof is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All correspondence should be directed to our address given below.

Respectfully submitted,



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